

I. PURPOSE AND NEED

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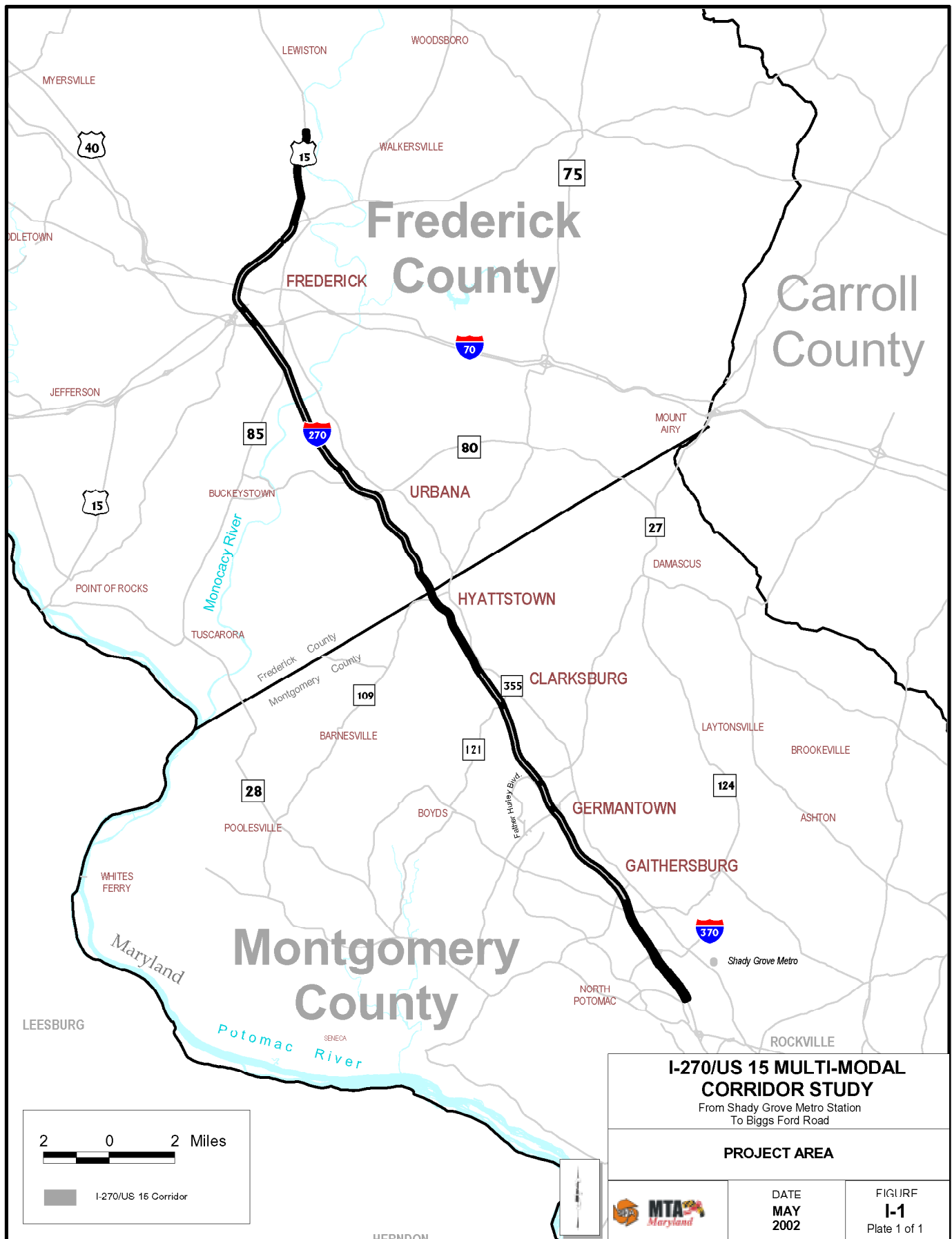
A. INTRODUCTION/SUMMARY STATEMENT OF PURPOSE AND NEED

The purpose of the I-270/US 15 Multi-Modal Corridor Study is to investigate options to address congestion and improve safety conditions along the I-270/US 15 Corridor. The I-270/US 15 Corridor provides an essential connection between the Washington, DC metropolitan area and both central and western Maryland and is an important corridor for carrying local and long distance trips, both within and beyond the Corridor. The National Highway System (NHS) Designation Act of 1995 adopted both I-270 and US 15 as elements of the NHS. A variety of transportation modes are utilized in the I-270/US 15 Corridor (including interstate highway, high-occupancy vehicle lanes, commuter rail, and bus service) and intermodal opportunities (including park and ride lots and Metrorail). However, even with the variety of options available, the Corridor is currently highly congested at many locations. These problems are expected to become more severe as continued planned development occurs over the next quarter century.

B. PROJECT LOCATION AND DESCRIPTION

The project area generally extends from the Shady Grove Metro Station south of I-370 (Montgomery County) to the US 15/Biggs Ford Road intersection north of the City of Frederick (Frederick County), as shown in **Figure I-1**. The I-270/US 15 Corridor is a vital component of the surface transportation system in the Mid-Atlantic region. The Corridor includes portions of I-270, US 15, and US 40 in Montgomery and Frederick counties. I-270, which begins at the Capital Beltway (I-495) and ends at I-70 in Frederick, provides one of the two interstate highway connections between the nation's capital and points west (the other connection is I-66 in Virginia) and north. As an interstate highway, I-270 is a fully access-controlled facility with a variable number of lanes ranging from four to twelve. In Maryland, US 15 extends from the Virginia state line near Point of Rocks to the Pennsylvania state line near Emmitsburg, and provides a major north-south route located between the interstate corridors of I-81 to the west and I-83/I-95 to the east. US 15 provides an important crossing of the Potomac River as well. Throughout most of its approximate 30-mile length in Maryland, US 15 is a multi-lane highway, with varying degrees of access control.

Transit is available throughout the region in various forms and serves a variety of users (**Figure I-2**). The MARC Brunswick Line, a commuter rail service operated by MTA, generally follows the Potomac River from Martinsburg, WV to south of Point of Rocks, MD where it continues inland through Germantown, MD and on to Rockville, MD and terminates in Washington, DC. This rail line offers connections to the Metrorail at Rockville and Union Station and Metrobus and Montgomery County's Ride On local bus service at various stations south from Germantown. An extension of this line opened in December 2001 and connects several stations in Frederick to the Point of Rocks station. Local bus service along the project corridor is available in Montgomery County with Metrobus and Ride On and in Frederick County with TransIT. These routes cross I-270 and US 15 at numerous locations, and on some routes, run parallel to the Corridor. A commuter bus service operated by MTA provides service along the corridor from Hagerstown to the Shady Grove Metrorail Station with a stop in Frederick.



The I-270/US 15 Corridor serves local and long distance trips between the Washington, DC metropolitan area, central and western Maryland, and beyond. Known as the “Technology Corridor”, this area is home to many high-tech industries and research facilities as well as commercial, cultural and recreational activities. The I-270/US 15 Corridor is a major commuting route for tens of thousands of workers each day.

I-270/US 15 has three distinct sections that differ in terms of physical characteristics, traffic service provided, and future needs. The three sections include: I-270 from Shady Grove Road to I-70; US 15/US 40 from I-70 to MD 26; and US 15 from MD 26 to Biggs Ford Road. I-270 is classified as an urban interstate from I-495 to the Little Seneca Creek, a rural interstate from the Little Seneca Creek to the Monocacy River, and an urban interstate from the Monocacy River to I-70. US 15 between I-70 and MD 26 is a four lane divided fully access-controlled roadway. US 15 between MD 26 and Biggs Ford Road is a four lane divided highway, with access provided by means of at-grade intersections. Left turns onto US 15 from side roads are generally prohibited in this area, and U-turn bays are located along the median to provide for this movement. The differences between these sections are described in **Section I.D**, Project Need.

C. PROJECT BACKGROUND AND HISTORY

The I-270 Corridor has been the subject of transit service studies as far back as 1970. Portions of the transportation alternatives presented in the DEIS are a continuation of various transportation studies throughout the Corridor. The following describes the previous transportation study efforts either partially or wholly contained within the I-270/US 15 Multi-Modal Corridor Study project limits. The current I-270/US 15 Multi-Modal Corridor Study DEIS is the latest manifestation of this series of transportation studies conducted by various local and state agencies to address transportation needs in the corridor. The DEIS represents Stage II of a three stage project planning process with the Maryland State Highway Administration and Maryland Transit Administration and is a transition between prior concept planning work and Stage II Final Environmental Impact Statement.

Washington Metropolitan Area Transit Authority (WMATA) conducted a sketch planning study in 1970 to identify a preliminary location for a Shady Grove to Metropolitan Grove transit alignment. In 1988, SHA planning activities began for a highway widening of I-270 and US 15 from MD 121 to Hayward Road, and later in the Interstate Development and Evaluation portion of the 1989-1994 Consolidated Transportation Program (CTP). In 1990, two additional highway components were added to the study. The project was extended from Hayward Road north to Biggs Ford Road because of its direct connection to Walkersville, an area in which substantial growth is expected. The project was extended from MD 121 south to MD 124 because of changing traffic patterns in the area, as well as the opportunity to consider the extension of the collector-distributor or "local" lanes that exist south of MD 124 (northbound), and I-370 (southbound).

The Maryland Department of Transportation's (MDOT) *Statewide Commuter Assistance Study* was completed in 1990, and identified the need for a multi-modal corridor study for the I-270/US 15 Corridor. Subsequently, transit easement options were added to the study. Also in 1990, Montgomery County and the M-NCPPC sponsored the *I-270 Corridor Cities Transit*

Easement Study. This two-phase study identified alternative transit alignment corridors and the applicable transit modes for these corridors. This effort resulted in the recommendation of two corridors: CSX for heavy rail (to Metropolitan Grove) and the Corridor Cities Transitway (CCT) for light rail or busway (to Clarksburg). The second phase of the study also investigated potential yard and shop facility sites for transit vehicles, however, no recommendations for a site(s) were made and no property was acquired or reserved for future consideration.

Further, in 1991, Frederick County sponsored a *Transit Easement Study* within the County to identify feasible alignments and transit modes from the Frederick/Montgomery County line to downtown Frederick. This resulted in three alignments being declared feasible for engineering purposes. One alignment ran parallel and adjacent to I-270, which was compatible for light rail and busway modes.

In 1992, four alternatives packages were developed and submitted to the Metropolitan Washington Council of Governments (MWCOC) for traffic modeling. The multi-modal options included Transportation System Management (TSM), Transportation Demand Management (TDM), High Occupancy Vehicle (HOV) lanes, Light Rail Transit (LRT), and a Busway. Montgomery County began a separate transit alignment feasibility study around the same time. In the vicinity of the I-270/US 15 Corridor three more studies began in 1993, including an access control study along US 15 from MD 26 to the Pennsylvania line (the Montgomery County Transit Corridor Easement Study); a study to extend the Maryland Rail Commuter (MARC) commuter rail line to Frederick from Point of Rocks (the Frederick County Transit Corridor Easement Study); and a feasibility study to investigate the widening of I-270/US 15 from MD 121 to Hayward Road.

Based on the MWCOC traffic modeling, the four alternatives were further evolved into “stand alone” transportation strategies that consisted of TSM/TDM, HOV lanes, a Transitway (light rail or bus) and Highway Widening. The modeling and impacts analyses of these transportation strategies resulted in the conclusion that no one of these elements individually would satisfy the corridor’s transportation needs. As a result, the transportation strategies were combined to create the alternates under consideration with this environmental evaluation.

In addition to the development of the combined transportation strategies, the evaluation of potential transitway yard and shop facility sites has been included to screen for feasible locations. The evaluation screening reviews environmental and transit operational issues to develop a reduced candidate list of facility sites for further consideration during the Final EIS phase of this study.

1. Goals

In order to more effectively evaluate the proposed transportation strategies and alternates, the project team with the concurrence of the I-270/US 15 focus group developed a list of five goals for this project:

Support Orderly Economic Growth

Support the orderly economic development of the I-270/US 15 Corridor consistent with the local government land use plans and Maryland's Economic Growth, Resource Protection and Planning Act.

Enhance Mobility

Provide enhanced traveler mobility throughout the I-270/US 15 Corridor by: optimizing travel choices by destination, mode and route; minimizing delay; and improving the safety and overall efficiency of the transportation system.

Improve Goods Movement

Facilitate the movement of goods within and through the I-270/US 15 Corridor and improve the delivery of services in support of the regional and local economies.

Preserve and Protect the Environment

Deliver transportation services in a manner that preserves, protects and enhances the quality of life and social and cultural environment in the I-270/US 15 Corridor.

Optimize Public Investment

Provide a transportation system in the I-270/US 15 Corridor that makes optimal use of existing transportation infrastructure while making cost effective investments in facilities and services that support other project goals.

2. Master Plan Context

In general, master plans provide a set of comprehensive recommendations and guidelines that reflect a vision for the future development of local communities. Master plan recommendations and guidelines present a vision for a 20-year time horizon from the date of adoption, although the plans are generally updated approximately every 10 years.

The Montgomery County planning process is based upon the concept of "Wedges and Corridors", developed in the 1960s to preserve open space in a developing suburban environment. The Wedges and Corridors concept represents development along radial transportation corridors, which are separated by wedges of open space. In contrast, Frederick County's regional plan is based on centering development around clusters. The success of both concepts is dependent upon the provision of acceptable levels of transportation service along key transportation and/or development corridors.

In general, the master plans for the I-270/US 15 Corridor identify the desirability of increased reliance on multi-occupant vehicles, generally calling for 30% (or more) non-single occupant vehicle usage. Local master plans also identify the desirability of transportation system improvements in the project area:

- The *Gaithersburg Vicinity-Shady Grove Master Plan Amendment* (November 1996) amends the location of the Corridor Cities Transitway alignment and reserves additional right-of-way along Decoverly Drive between Diamondback Drive and Great Seneca Highway.

- The *Gaithersburg Vicinity Master Plan Amendment* (July 1990) recommends the widening of right-of-way for major highways, including I-270, and a “northern transitway” extending from the Shady Grove Metro Station to Great Seneca Highway.
- The *Germantown Master Plan* (1990) recommends eight lanes on I-270 and the provision of local (collector-distributor) lanes on I-270 from Gaithersburg to Clarksburg. The Plan suggests providing a transitway through the planning area, increased bus service, two park and ride lots and expansion of area MARC facilities.
- The *Clarksburg Master Plan and Hyattstown Special Study Area* (1994) presents the following transportation-related recommendations:

Transit: --A regional transitway linking the region from the City of Frederick to north of the Shady Grove Metro Station through Clarksburg

--Regional and local bus routes linking developed areas to transit stations

--Improved MARC service

--Additional Park and ride lots

Highway: The Plan recommends widening I-270 to eight lanes plus local (collector-distributor) lanes up to MD 121, and six lanes plus local (collector-distributor lanes) from MD 121 to the county line. One new interchange at Newcut Road and the closure of the I-270 interchange at Old Hundred Road (MD 109) are also recommended.
- The *Frederick Region Plan* (1992) identifies the desirability of replacing five at-grade intersections along US 15 north of MD 26 with grade-separated interchanges, as well as upgrading the existing MD 85 interchange along I-270. The plan also identifies a transitway into downtown Frederick.
- The *Frederick County Comprehensive Plan* (October 1998) supports the development of a transitway along the I-270 Corridor that connects the Shady Grove Metro Station with downtown Frederick.
- The *Urbana Region Plan* (1993) recommends three new interchanges along I-270: (I-270 and MD-75, I-270 and MD 85 - South Urbana, and I-270 and MD 80 - North Urbana), a new park and ride lot and relocation of an existing lot. To better serve proposed development, the plan recommends a transitway from the Montgomery/Frederick county line to the City of Frederick and two transit stations.
- The *City of Frederick Comprehensive Plan* (August 1995) supports direct transit service to the Montgomery County/Washington, DC employment market and identifies a transitway into downtown Frederick. The Plan also recommends improvements to the I-270/I-70 and US 15/MD 26 interchanges, as well as new interchanges at the existing at-grade intersections of US 15/Trading Lane and US 15/Biggs Ford Road.

In addition, Montgomery and Frederick counties have each performed separate but coordinated transit easement studies, each of which has identified feasible alternatives for further study. Montgomery County has sponsored two studies: the *I-270 Corridor Cities Transit Easement*

Study by the Maryland-National Capital Park and Planning Commission (M-NCPPC), and the *Shady Grove/Clarksburg Transitway Study* by the Montgomery County Department of Transportation. Frederick County's study is called the *I-270 Corridor Cities Transit Easement Study -- Frederick County Extension*.

In early 2000, the Maryland Transit Administration (MTA) initiated a long-term master plan of the entire MARC system, which includes the Brunswick Line within the project area. Because CSX and Amtrak own the railroad tracks on which the MARC system operates, MTA is working with CSX and Amtrak officials to complete the plan, which will identify the future needs and goals in the MARC corridor for the next 24 years. The *MARC Needs Assessment and Master Plan Study* will consider system capacity and operational improvements. The study is ongoing and anticipated for completion in mid-2003, pending concurrence and approval from both railroads.

D. PROJECT NEED

The I-270/US 15 Corridor is one of the most traveled north-south transportation corridors in Maryland. The Corridor provides an essential connection between the Washington, DC metropolitan area and central and western Maryland, and is critical from both a personal transport and goods transport perspective. It also provides a connection to the Midwest via I-70 and I-68.

Substantial freight traverses the Corridor, using both highway and rail. Trucks account for approximately 9% of the daily traffic along I-270, this compares to trucks accounting for 6% of the daily traffic on I-495 near MD 191 and 8% of the daily traffic on US 15/US 340 near Rosemont Avenue. The Corridor also serves a major commuter population that works in the District of Columbia, southern Montgomery County, and Frederick County, and provides access to employment opportunities within the Corridor itself. The majority of these commuters travel from the City of Frederick or upper Montgomery County into central and lower Montgomery County (i.e. Bethesda, Rockville, and Gaithersburg) and Washington, DC. In addition, the Corridor provides the primary travel path from the population centers of the Washington metropolitan area to recreational sites located in western Maryland and to historic resources within/near the project area, such as the Monocacy National Battlefield and the C&O Canal National Historical Park.

The area is currently served by a variety of transportation modes (including interstate highway, high-occupancy vehicle lanes, commuter rail, and bus service) and intermodal opportunities (including park and ride lots and Metrorail). However, even with this existing transportation system, current operating conditions are congested at many locations within the project area. These problems are expected to become more severe as continued growth in both population and employment occur over the next quarter century.

Analysis of current and projected traffic volumes, and recent accident experience reveals that I-270 and US 15 can be divided into three distinct components. Their differences will be considered when identifying and evaluating alternatives. These components differ in terms of

physical characteristics and type of traffic service provided, and therefore differ in terms of need as well. The components are:

- **I-270 from Shady Grove Road to I-70.** Traffic conditions on this section are expected to worsen dramatically by 2025 due to projected increases in population and employment as the result of planned development along this Montgomery County portion of the Corridor, and the projected expansion of suburban residential development in the Frederick area. The primary needs of this component are to relieve existing congestion and provide capacity for projected development in Montgomery County and Frederick County.
- **US 15/US 40 from I-70 to MD 26.** Although existing and projected traffic volumes on this section of US 15 are not quite as high as those along I-270, congestion is still a problem. This component serves as a fully access-controlled connector from I-70 and I-270 to northern Frederick County, as well as a route for local traffic within the City of Frederick. Primary need for improvement of this component include providing safe travel for the collection and dispersal of local traffic to and from interchanges, as well as I-270 and I-70, while providing for US 15 traffic from the north as a result of existing and planned development.
- **US 15 from MD 26 to Biggs Ford Road.** This component of the Corridor serves an arterial function with limited control of access and with lower traffic volumes. The provision of access controls for safe and efficient access to planned long-term development as it occurs must be addressed.

As part of the overall evaluation of future conditions along the I-270/US 15 Corridor, the project team reviewed projected travel times. **Table I-1** highlights selected origins and destinations within the corridor and provides the year 2025 projected No-Build travel time (in minutes) for each origin-destination pair. **Chapter IV** compares the travel times for build alternates with the No-Build alternate.

TABLE I-1
YEAR 2025 PROJECTED NO-BUILD TRAVEL TIME (IN MINUTES) BETWEEN
SELECTED ORIGINS AND DESTINATIONS

Origins	Destinations	Transit via Walk Access ¹	Transit via Auto Access ²	Low Occupancy Vehicle ³	High Occupancy Vehicle ⁴
Germantown	Downtown DC (Connecticut Avenue and K Street)	78	62	78	70
Germantown	Bethesda	64	48	50	42
Germantown	Rockville Town Center	44	32	28	26
Germantown	Life Sciences Center	36	52	18	18
Clarksburg	Downtown DC (Connecticut Avenue and K Street)	99	71	87	79
Clarksburg	Bethesda	62	57	59	51
Clarksburg	Life Sciences Center	79	61	27	27
Clarksburg	Germantown	50	N/A	11	11
Frederick City	Downtown DC (Connecticut Avenue and K Street)	109	110	110	109
Frederick City	Bethesda	95	96	88	80
Frederick City	Rockville Town Center	75	76	66	64
Frederick City	Life Sciences Center	101	105	57	57
Frederick City	Germantown	61	62	46	46

Notes:

1. Travel times shown include time to access the transit vehicle via walking to the boarding location.
2. Travel times shown include time to access the transit vehicle via driving to the boarding location.
3. Low occupancy vehicle is defined as a vehicle with two or less occupants (driver alone or driver with one passenger).
4. High occupancy vehicle is defined as a vehicle with driver and two or more passengers.

Source: MWCOG Travel Forecasts 4/2001-7/2001

1. Existing Transportation Services and Facilities

a. Highways

Originally built in the early 1950s as a four-lane freeway called the Washington National Pike (US 240), the travel route now referred to as I-270 has been improved and widened over the years. I-270 is classified as an urban interstate from I-495 to the Little Seneca Creek, a rural interstate from the Little Seneca Creek to the Monocacy River, and an urban interstate from the Monocacy River to I-70. Currently, I-270 is configured as follows:

- **Y-split (just north of I-495) to I-370:** Three general-purpose lanes, one HOV lane and two collector-distributor, or local lanes, northbound and southbound.
- **I-370 to MD 124:** Three general-purpose lanes, one HOV lane and two collector-distributor, or local lanes, northbound; four general-purpose lanes southbound.

- **MD 124 to MD 118:** Three general-purpose lanes and one HOV lane northbound; four general-purpose lanes southbound.
- **MD 118 to MD 121:** Two general-purpose lanes and one HOV lane northbound; three general-purpose lanes southbound.
- **MD 121 to I-70:** Two general-purpose lanes northbound and southbound.

Within the project limits, US 15 is classified as an urban freeway/expressway from I-70 to north of Biggs Ford Road, where it is then classified as a rural principal arterial. Currently, US 15 is configured as follows:

- **I-70 to MD 26:** Four-lane divided fully access-controlled roadway.
- **MD 26 to Biggs Ford Road:** Four-lane divided highway, with access provided by means of at-grade intersections. Left turns onto US 15 from side roads are generally prohibited in this area, and U-turn bays are located within the median to provide for this movement.

There are a limited number of alternate north-south routes available to meet the current transportation needs of the Corridor. The only roadway facility that parallels I-270/US 15 for the length of the project area is MD 355. In the southern portion of the Corridor from I-495 to the northern outer limits of Gaithersburg (near Watkins Mill Road), MD 355 is a multi-lane highway with no control of access. It is primarily a two-lane rural highway from Gaithersburg north (a majority of the project length), except for a short four-lane section just south of the City of Frederick. In the two-lane component, MD 355 has geometric limitations that restrict its traffic-carrying capabilities. These characteristics include steep grades, rolling terrain, poor sight distance, and numerous private entrances. MD 355 is classified as an urban principal arterial from the southern end of the Corridor until its intersection with MD 118, where it is classified as a rural minor arterial. North of Brink Road, it becomes a rural major collector, continuing into Frederick County until MD 85 (Buckeystown Pike). From there, it is considered an urban minor arterial or collector until its intersection with US 15. Other routes providing north south access in the vicinity include MD 85 to MD 28 or MD 112/MD 190, however these routes do not provide the capacity nearing that of either I-270/US 15 or MD 355.

b. Transit

MARC Commuter Rail

Commuter rail service is available in the Corridor through MTA's MARC system. MARC offers service from Martinsburg, West Virginia through Point of Rocks, Maryland to Washington, DC. The stations and passenger service along this Corridor are primarily oriented toward commuters working in downtown Washington, DC, as well as commuters who work in Rockville, Silver Spring or other locations in Montgomery County. Transfers are available to the WMATA Metrorail train system in Rockville, Silver Spring and Union Station. The MARC Brunswick Line currently serves approximately 2,524 riders during the AM peak period and 5,047 riders daily. Frederick County Transit currently operates a "Meet the MARC" shuttle service between Point of Rocks and the City of Frederick, which transports an average daily ridership of 72 people. An extension of the MARC line from Point of Rocks to downtown Frederick began passenger service in December 2001.

Metrorail (WMATA) – Washington, DC Metropolitan area

The northwestern terminus of the Metrorail system is the Shady Grove Station, which is located at the southern end of the project area. Direct connections to Metrorail from MARC are available in Rockville and Union Station. Metrorail provides service to the south, but does not currently provide service into or through the project area. Currently, the Shady Grove Metro Station serves approximately 8,301 riders during the AM (5:30-9:30 AM) peak period (and 20,762 daily Metrorail boardings). The station serves as a major intermodal transfer facility, with about 2,400 people entering the station by bus daily. The station currently provides 5,791 parking spaces for commuters, with a total of 7,800 spaces anticipated by 2010.

MTA Commuter Bus

In addition to MARC Rail, MTA provides transit service through a contract with a privately operated commuter bus service (# 991) between Hagerstown, Frederick and the Shady Grove Metro Station. This service currently transports 95 riders during the AM peak period and 189 riders daily on a typical weekday.

TransIT – Frederick County

Approximately 929 riders per day use Frederick TransIT's local bus system. This system operates primarily within the City of Frederick, but also provides service to other locations in Frederick County, such as the Francis Scott Key Mall.

Ride On – Montgomery County

Montgomery County provides bus service within the project area via Ride On, which generally operates in support of Metrorail, Metrobus and MARC services. In the Gaithersburg/northern Rockville area, Ride On transit serves approximately 26,000 AM peak period riders.

Metrobus - WMATA

Metrobus service provided by WMATA primarily serves the areas south of the Shady Grove Metro Station, serving approximately 14,369 riders per day.

Table I-2 indicates the average daily ridership for transit service provided in the Corridor.

**TABLE I-2
TRANSIT DAILY RIDERSHIP**

	MTA ¹		WMATA ²		Montgomery County ³	Frederick County ⁴	
	MARC Brunswick Line	Commuter Bus # 991	Shady Grove Metrorail	MetroBus Service	Ride On Bus	TransIT Bus	Meet the MARC
Annual	1,286,985	48,195	5,190,385	3,592,286	21,700,000	236,076	18,286
Average Daily	5,047	189	20,762	14,369	74,500	929	72
AM Peak	2,524	95	8,301	4,360	26,000	N/A	N/A

Sources: 1. MTA (2000)
2. WMATA (FY 2001)
3. Montgomery County DPW&T, Transit Services Division (FY 2001)
4. TransIT Services of Frederick County (FY 2001)
N/A Not Available

c. High Occupancy Vehicle (HOV) Lanes

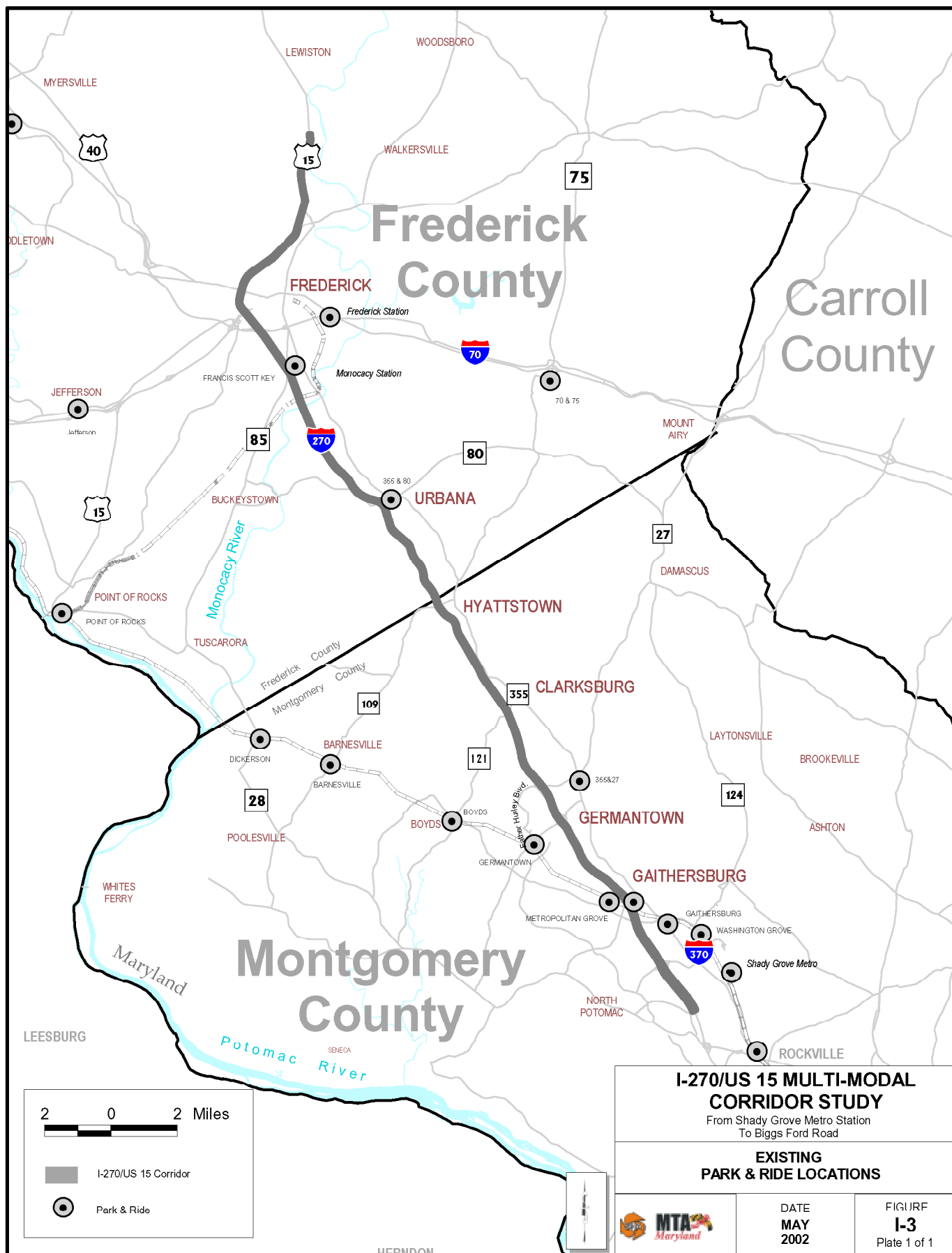
HOV lanes currently exist on the east and west spurs (both northbound and southbound) of I-270 from I-495 north to the Y-split and both northbound and southbound on I-270 from the Y-split to I-370 (approximately nine miles). HOV lanes also exist on northbound I-270, from I-370 to MD 121 (approximately nine miles for an 18 mile HOV lane on northbound I-270 from I-495 to MD 121). These HOV lanes have been evaluated in the Corridor since their implementation in September 1993 and have been meeting national occupancy standards. Generally, the Federal government allows State governments to establish the occupancy requirements for HOV lane usage, as long as there is a minimum of 2 people in the vehicle. For example, State Highway Administration (SHA) reports that the average auto occupancy along the I-270 Corridor is 2.41 passengers per vehicle as of March 2000 (2.49 southbound east Spur; 2.32 southbound west spur; 2.44 northbound east spur; and 2.39 northbound west spur) and the travel time savings is approximately 5 minutes for travel along the Corridor between the I-495 and MD 121 (March 2000).

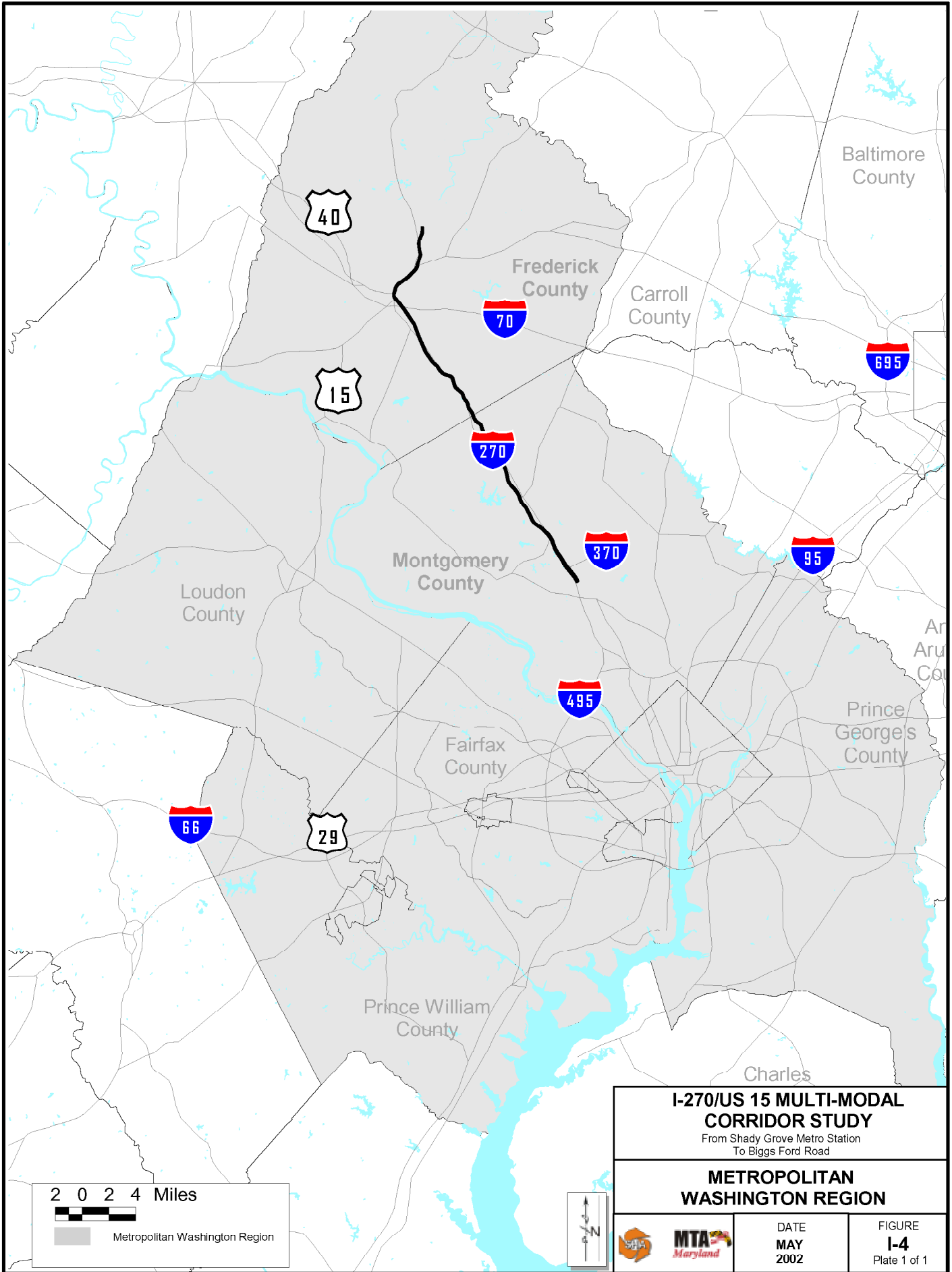
d. Park and Ride Lots

Park and ride lots (shown on **Figure I-3**) are available throughout the project area to accommodate ridesharing and multi-modal travel. These facilities range in size from 15 spaces at the Washington Grove MARC Station to 4,260 (7,810 by 2010) spaces at the Shady Grove Metro Station.

2. Regional Growth

The Metropolitan Washington Region, as defined by MWCOG, consists of the District of Columbia; the Maryland counties of Frederick, Montgomery, and Prince George's; the Virginia counties of Arlington, Fairfax, Loudoun and Prince William; as well as select cities within some of these Maryland and Virginia counties (**Figure I-4**). In addition, Calvert and Charles counties (Maryland) and Stafford County (Virginia) are included for air quality planning and conformity.





This delineation is consistent with the Cooperative Forecasting Program initiated by MWCOG, the M-NCPPC, and the local governments of the Washington metropolitan area.

Round 6.2 Cooperative Forecasts of demographics produced by MWCOG in April 2000 indicate that considerable population, household, and employment growth has happened and is expected to continue in the Metropolitan Washington Region, as well as both Montgomery and Frederick counties, between 1990 and 2025:

- Regional employment is expected to total nearly 3.9 million jobs by 2025, a 56% increase over 1990 employment of 2.5 million jobs. Also under the Round 6.2 Cooperative Forecasts, regional population is forecast to increase 50%, reaching almost 5.9 million in 2025. The number of households is expected to attain almost 2.3 million in 2025, a 56% increase over 1990 estimates.
- Population in Montgomery County is expected to increase by almost 35%, and population in Frederick County is expected to grow by 102%.
- In both counties, employment is expected to increase at an even faster rate than population, 45% growth is expected in Montgomery County and 201% growth is expected in Frederick County.

Table I-3 indicates the demographic data upon which all travel demand forecasts for the design year of 2025 were developed. The first forecast, referred to as the "2025 No-Build" forecast, is based upon the premise that, in addition to the existing transportation infrastructure serving the project area, the planned and/or programmed improvements cited in **Table I-4** will be in existence in the year 2025. Outside of the project area all projects included in the MWCOG 2025 Constrained Long Range Plan (CLRP) were included in the travel forecasts. The substantial population and employment growth within the I-270/US 15 Corridor will create travel demand exceeding the capacity of the existing transportation system. Without sufficient improvements, traffic congestion will worsen, which can increase commuter travel times, accidents and pollution.

**TABLE I-3
DEMOGRAPHIC FORECASTS**

Area	1990 Population	2025 Population	Percent Change	1990 Employment	2025 Employment	Percent Change
Montgomery County	757,000	1,020,000	35%	466,000	685,000	47%
Frederick County	150,200	303,400	102%	54,000	162,500	201%
Metropolitan Washington Region*	3,923,600	5,893,000	50%	2,488,300	3,880,700	56%

Note: *The Metropolitan Washington Region includes: Calvert, Charles, Frederick, Montgomery, and Prince Georges Counties in Maryland; Arlington Fairfax, Loudoun, Prince William, and Stafford Counties in Virginia; the cities of Alexandria, Fairfax, Falls Church, Manassas and Manassas Park in Virginia; and the District of Columbia.

Source: MWCOG, Round 6.2 Cooperative Forecasts, April 2000.

Much of the anticipated development is planned to occur in identified activity centers such as Gaithersburg, Germantown, Clarksburg, Urbana, and Frederick. However, even these activity centers represent a further dispersion of population and employment throughout the Corridor than currently exists. Especially noteworthy are the projected increases in households and employment in Clarksburg and Urbana. Residential development is ongoing in Clarksburg, while residential, commercial, and a planned urban development (PUD) are expected in Urbana. The City of Frederick also anticipates a substantial increase in residential development and employment, causing the projected number of households to almost double.

Varied land uses exist throughout the project area. The southern portion of the project area, generally south of MD 121, consists of residential (a mixture of single-family homes, townhomes, and condominiums) and commercial with office/industrial development along both sides of I-270. North of MD 121, most of the anticipated development is concentrated east of I-270, mainly consisting of office/light industrial uses. Most of the land west of I-270 is expected to remain agricultural/conservation. Residential and some commercial uses exist in Clarksburg and Urbana. Land uses in the vicinity of the City of Frederick are a mixture of residential and commercial, with some agricultural and industrial designations north of the Frederick city limits. Parks and woodlands also exist throughout the Corridor.

3. Travel Demand

a. Highway

Average Daily Traffic (ADT) volumes have been increasing steadily on I-270/US 15 as well as other roadways in the project area. Throughout most of the Corridor, volumes on I-270/US 15 increased at an average rate of approximately 1-3 % per year between 1993 and 1997, depending on the roadway section. Volumes on MD 355 and other roadways in the area also increased substantially, with annual percent growth similar to that observed on I-270/US 15.

The existing (1998) ADT volumes along the I-270/US 15 Corridor vary greatly depending upon location. These volumes generally decrease as one travels away from Washington, DC. The traffic volumes in the Corridor range from almost 175,000 vehicles per day at the southern end of the project area to about 36,000 vehicles per day at the northern end. In the vicinity of Frederick, traffic volumes increase slightly due to local traffic using US 15. Current ADT volumes on MD 355 also vary, ranging from 13,000 vehicles per day near MD 26 at the northern end of the project to 36,000 vehicles per day near Shady Grove Road at the southern end.

Table I-5 highlights the existing and forecasted ADT volumes at selected locations along the I-270/US 15 Corridor; the locations identified are illustrated on the Plan Sheets in **Chapter XI**.

TABLE I-4
TRANSPORTATION IMPROVEMENTS PROGRAMMED FOR
I-270/US 15 CORRIDOR INCLUDED IN 2025 FORECASTS

Location	Description	Projected Completion Date
Highway Upgrade, Reconstruction, Extension and Widening Projects		
I-270 from Middlebrook Road to MD 121	Additional lane in each direction (HOV in peak period); Interchange reconstruction/reconfiguration and associated bridge work at I-270/MD 118 and I-270/MD121	1996 (completed)
MD 118 from MD 117 to I-270	Upgrade MD 118 to multi-lane, divided highway	1999 (completed)
MD 124 from MD 28 to Longdraft Road	Reconstruct MD 124 to a 6-lane highway	2002
MD 355 from MD 124 to Middlebrook Road	Reconstruct MD 355 to a 6-lane highway	2000 (completed)
MD 355 from Middlebrook Road to MD 27	Reconstruct MD 355 to a 4-lane highway	1997 (completed)
I-270 from Father Hurley Blvd to MD 144	Construction of new interchange and roadway extension	1995 (completed)
I-70 from Mt. Philip Road to MD 144	Reconstruction I-70/I-270/US 15/US 340 interchange complex and upgrade highway to current design standards	2010
I-270 from I-495 to north of MD 121	Implement HOV median lane during peak	1999 (completed)
MD 26 from Trading Lane to MD 194	Widen MD 26 to 4-lane highway	1996 (completed)
MD 28 from Rifleford Road to Shady Grove Road	Widen MD 28 to 4/6-lane highway	2004
Transit Extensions and Parking Expansion Projects		
Point of Rocks to City of Frederick	Extension of MARC service	2001 (completed)
MARC Brunswick Station	Expansion of parking lot	1999 (completed)
MARC Germantown Station	Expansion of parking lot	1999 (completed)
Montgomery County	Construction of transit centers at Olney, Lakeforest Mall and Burtonsville	2010 1998 2003
MD 118/Crystal Rock Drive	Construction of park and ride lot opening in 2001	2005
MD 118/Crystal Rock Drive	Germantown Transit Center	2001
Shady Grove Metro Station	Expansion of parking lot	2010

TABLE I-5
AVERAGE DAILY TRAFFIC (ADT) VOLUMES (NO-BUILD ALTERNATE)

Location	1998 ADT Volumes	2025 ADT Volumes	Percent Growth
I-270: Shady Grove Road and I-370	174,900	254,000	45%
I-270: MD 124 and Middlebrook Road	119,600	213,500	79%
I-270: MD 118 and Father Hurley Boulevard	83,100	130,200	57%
I-270: MD 109 and MD 80	68,350	102,800	50%
I-270: MD 80 and MD 85	71,250	125,600	76%
US 15: Opossumtown Pike and MD 26	68,700	80,400	17%
US 15: Hayward Road and Biggs Ford Road	35,700	61,900	73%

Traffic volume growth on both I-270 and MD 355 is expected to be substantial. The 2025 No-Build ADT volumes on I-270/US 15 range from approximately 254,000 vehicles per day at the southern end of the project area to approximately 61,900 vehicles per day at the northern end. Projected volumes on MD 355 are expected to range from 105,000 vehicles per day at the southern end of the project area to 34,000 vehicles per day at the northern end.

Level-of-service (LOS) is a qualitative measure of traffic operating conditions, and is designated using a grading system much like academic grading. LOS A indicates free flowing traffic, while LOS B and LOS C represent stable flow in which the presence of other users in the traffic stream begins to be noticeable. Generally, LOS D indicates moderate traffic volumes that slightly impact the flow of traffic. LOS E indicates traffic volumes are approaching the capacity of the street or intersection and speeds are reduced to a lower, but relatively uniform value. This represents substandard conditions and results in significant congestion. LOS F represents stop-and-go, standstill traffic conditions.

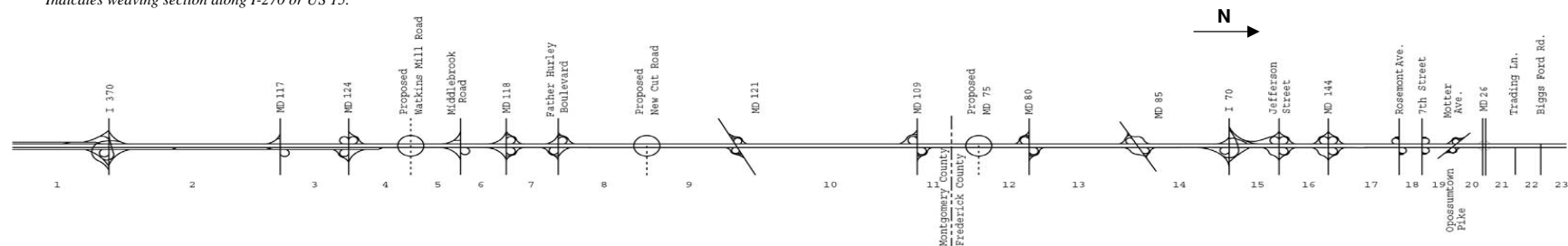
The volume-to-capacity (V/C) ratio compares the number of vehicles using or expected to use a segment of a road to the number of vehicles the road segment can handle safely and conveniently. When the V/C ratio is equal to or greater than 1.0 traffic congestion and delays increase at a faster rate, resulting in LOS F conditions. At the present time, most of I-270/US 15 experiences recurring congestion during the peak commuting periods. **Table I-6** shows the existing roadway segment LOS and the corresponding V/C ratios. Almost all of the mainline segments currently experience LOS rankings of D, E or F during the peak periods, with several links along the Corridor either at or over their capacity. Most of I-270 will continue to experience congested operating conditions during the peak periods in the design year 2025, even with all of the planned improvements in the Corridor. The substantial projected growth in employment and population is expected to result in increased Corridor traffic volumes and the corresponding increase in congestion.

TABLE I-6
EXISTING (1998) AND 2025 NO-BUILD AM (PM) PEAK HOUR LEVELS OF SERVICE (LOS) ^{1,2} /
VOLUME TO CAPACITY (V/C) RATIOS ³ ALONG I-270 AND US 15

I-270/US 15 Highway Segments	Existing (1998)				Alternate 1 (2025 No-Build)			
	Northbound		Southbound		Northbound		Southbound	
	I-270 Mainline	I-270 C-D Lanes	I-270 Mainline	I-270 C-D Lanes	I-270 Mainline	I-270 C-D Lanes	I-270 Mainline	I-270 C-D Lanes
1. South of I-370					C (D)	C (F) / – (1.91)	F (C) / 1.22 (–)	F (C) / 1.10 (–)
2. I-370 to MD 117	B (D)	A (C)	E (C)	-	C (F) / – (1.03)	A (E)	F (D) / 1.37 (–)	-
3. MD 117 to MD 124	B (D)	A (C)	E (B)	-	C (F) / – (1.09)	B (E)	F (D) / 1.41 (–)	-
4. MD 124 to Proposed Watkins Mill Road	B (E)	-	E (B)	-	D (F) / – (1.83)	-	F (D) / 1.49 (–)	-
5. Proposed Watkins Mill Road to Middlebrook Road								
6. Middlebrook Road to MD 118	A (D)	-	E (B)	-	C (F) / – (1.39)	-	F (D) / 1.51 (–)	-
7. MD 118 to Father Hurley Boulevard	B (E) ⁴	-	D (B)	-	C (F) ⁴	-	E (C)	-
8. Father Hurley Boulevard to Proposed Newcut Road	B (D)	-	C (B)	-	D (F) / – (1.94)	-	F (E) / 1.21 (–)	-
	I-270/US 15 Mainline		I-270/US 15 Mainline		I-270/US 15 Mainline		I-270/US 15 Mainline	
9. Proposed Newcut Road to MD 121	B (D)		C (B)		D (F) / – (1.94)		F (E) / 1.21 (–)	
10. MD 121 to MD 109	C (E)		E (C)		D (F) / – (1.45)		F (E) / 1.15 (–)	
11. MD 109 to Proposed MD 75	C (E)		E (C)		D (F) / – (1.25)		F (E) / 1.16 (–)	
12. Proposed MD 75 to MD 80								
13. MD 80 to MD 85	C (E)		E (C)		E (F) / – (1.41)		F (F) / 1.37 (1.00)	
14. MD 85 to I-70	B (D)		E (D)		C (F) / – (1.05)		F (F) / 1.48 (1.01)	
15. I-70 to Jefferson Street/US 15/US 340	C (E) ⁴		C (B)		C (E) ⁴		D (C)	
16. Jefferson Street/US 15/US 340 to MD 144/US 40	B (D) ⁴		D (C) ⁴		D (F) ⁴		E (D) ⁴	
17. MD 144/US 40 to Rosemont Avenue	D (E)		E (E)		E (F) / – (1.21)		F (F) / 1.04 (1.03)	
18. Rosemont Avenue to 7 th Street	D (E)		E (D)		E (E)		E (E)	
19. 7 th Street to Opossumtown Pike	D (E)		E (D)		D (E)		E (E)	
20. Opossumtown Pike to MD 26	C (E)		D (C)		C (E)		E (D)	
21. MD 26 to Trading Lane	B (C)		B (A)		D (F) / – (1.10)		F (C) / 1.00 (–)	
22. Trading Lane to Biggs Ford Road	A (C)		C (A)		C (E)		E (C)	
23. North of Biggs Ford Road								

Source: BMI, 2001

- LOS A - free flowing traffic; LOS B and C – stable flow of traffic; LOS D – slight impact to traffic flow; LOS E – traffic volumes approaching capacity of facility; LOS F – stop and go, standstill conditions.
- Mainline levels of service were calculated based on existing traffic counts for the Existing (1998) Scenario, and traffic projections for the 2025 No-Build Scenario.
- Volume to capacity (v/c) ratios reported for mainline (freeway) level of service F conditions only.
- Indicates weaving section along I-270 or US 15.



b. Transit

The I-270/US 15 Corridor is currently served by MTA MARC commuter rail service from Washington, DC to Brunswick and Frederick MD, WMATA Metrorail service along the Red Line to the Shady Grove and Rockville Metrorail Stations, MTA Commuter Bus service from Hagerstown and Frederick to the Shady Grove Metro Station, Montgomery County Ride-On bus service, Frederick County TransIt bus service, and WMATA Metrobus service. The 2025 MWCOG CLRP includes improved transit service for the I-270/US 15 Corridor, including the MARC line to Frederick (which opened in December 2001) and more frequent service on existing Ride-On routes. Transit use in 2025 was projected for the 2025 No-Build alternate that included this new transit service and projected new development in the corridor.

The 2025 land use forecast for the corridor focuses on developing areas that are transit friendly and well served by transit. This includes developing denser residential sites along transit routes, as well as having employment centers located near well-served transit corridors. The object of this land use plan is to provide added access to households and jobs via other means than the automobile. Proposed growth along the corridor will be served by auto as well as transit modes.

As can be seen in **Table I-7**, the No-Build travel demand forecast estimated that by 2025, rail transit use in the corridor could increase 62 percent. More significantly, passengers on the MARC line are projected to increase from approximately 5,100 today to nearly 24,000 in 2025, nearly 370%. This increase in MARC ridership would not have a substantial effect on congestion relief in the corridor. As discussed in the previous section, the 2025 traffic forecasts along I-270 and US 15 result in a significant increase in demand, greater than the available capacity. In 2025 transit will be used for nearly ten percent of the work trips that are made on an average weekday, even without new transit service beyond that included in the CLRP. The largest increase in demand for rail transit is expected to be for MARC service along the Brunswick and Frederick Lines. The projected future demand significantly exceeds MARC capacity included in the CLRP. The substantial new demand for MARC service can be attributed to major increases in housing expected to occur near MARC stations. New development near the existing Metrorail stations is not expected to be nearly as extensive.

**TABLE I-7
AVERAGE WEEKDAY RAIL PATRONAGE**

Mode	2000 Observed	2025 Forecast (No-Build)	Percent Change
Commuter Rail (MARC)	5,100	23,900	369%
Metrorail	35,100	41,100	17%
Total	40,200	65,000	62%

Highway improvements alone will not be able to address future demand for travel in the corridor, therefore alternative transportation solutions, in addition to highway improvements are needed. Public transit is one alternative that provides effective mobility solutions for those who might otherwise use the automobile as well as those who cannot drive a car. The majority of trips will continue to be made by automobile, but with the continued development and congestion in the corridor, improved transit service may possibly provide another good option for travel. The

projected transit demand demonstrates a need to study expanded transit service throughout the I-270/US 15 Corridor.

4. Safety

Accident analyses have been performed for I-270/US 15 (1996 to 1999 data) and MD 355 (1998 to 2000 data) within the project area. The accident rate and statewide average are based on 100 million vehicle miles (mvm) of travel.

The average accident rate along sections of I-270 within the study limits was lower than, or consistent with, the statewide average rate for similarly designed highways, with the exception of US 15 between I-70 and MD 26. As **Table I-8** indicates, the average accident rate of 81.5 accidents/100 mvm in this segment of the corridor was almost twice as high as the statewide average rate of 44.3 accidents/100 mvm for similarly designed highways. However, there were higher concentrations of accidents in several interchange areas along the corridor, primarily due to the conflict of vehicles entering and exiting the highway.

TABLE I-8
I-270/US 15 CORRIDOR
(SHADY GROVE METRO STATION TO BIGGS FORD ROAD)
ACCIDENT DATA (1996 – 1999)

Segment	Type	Number of Accidents	Corridor Accident Rate ¹	Statewide Accident Rate ¹
I-270 from I-370 to MD 124	Fatal	1	0.2	0.3
	Total	216	46.4	44.3
I-270 from MD 124 to MD118	Fatal	0	0	0.3
	Total	207	38.4	44.3
I-270 from MD 118 to MD121	Fatal	1	0.3	0.5
	Total	137	34.3	42.7
I-270 from MD 121 to I-70	Fatal	7	0.5	0.5
	Total	503	35.3	41.8
US 15 from I-70 to MD 26	Fatal	0	0	0.3
	Total	270	81.5 ²	44.3
US 15 from MD 26 to Biggs Ford Road	Fatal	0	0	1
	Total	80	60.2	89.1

Source: Maryland State Highway Administration

1. 100 mvm; rate per 100 million vehicle miles
2. Significantly higher than the statewide average rate

The high accident rate in the US 15 segment between I-70 and MD 26 may be attributed to the mixture of local traffic and high-speed through traffic, which has to travel through closely spaced interchanges within the City of Frederick and at-grade intersections north of the city.

A Candidate Safety Improvement Section (CSIS, formerly known as an High Accident Section, or HAS) is defined as a half-mile section (or less) of roadway with an accident rate exceeding the statewide average, discounting intersection-related accidents. Seven sections of I-270/US 15 met the criteria for a CSIS in 1998, including:

- I-270 in the vicinity of the MD 124, Middlebrook Road and MD 109 interchanges
- US 15 in the vicinity of the MD 180, Patrick Street (US 40), Rosemont Avenue and the West 7th Street interchanges

Several sections along MD 355 within the project limits experienced greater than average accident frequency. High accident locations occurred mainly in urbanized areas, most likely due to the many traffic signals and commercial driveways in these areas.

As the volume and congestion along I-270/US 15 increase, motorists will seek other travel routes. This would result in increased use of the local roadway system, making conditions on the local roadway network more congested and potentially unsafe. The higher than statewide average accident experience along MD 355, combined with the lack of access, areas of urbanization, and areas with poor geometric characteristics, reinforces the need to discourage motorists from over-using this alternate route. In addition, based on the assumption that as traffic volumes rise, accident numbers rise proportionately (due to congestion-related accidents), increased congestion may continue to worsen the already high accident rate along US 15 and may result in an increased accident rate along I-270.

E. PLANNING CONTEXT AND PROJECT DEVELOPMENT PROCESS

1. Role of the DEIS in Transit Project Development

Since the late 1970s, the Federal Transit Administration (FTA) has required projects requesting discretionary federal funding aid to follow a five-step development process. In brief, the five steps are: 1) System Planning; 2) Major Investment Study (MIS); 3) Preliminary Engineering/Final Environmental Impact Statement (PE/FEIS); 4) Final Design; and 5) Construction. This DEIS was developed consistent with the National Environmental Policy Act (NEPA). As part of the MIS, the project team worked with the MWCOG, as well as the public and participating resource and regulatory agencies, to identify the design concept and scope of the transportation investment.

Metropolitan Planning Organizations (MPOs) require that a proposed project be included in a metropolitan area's CLRP and Transportation Improvement Program (TIP) in order to advance into the Preliminary Engineering phase. The CLRP and TIP under MPO regulations are financially constrained (identifies funding sources for construction and operations and maintenance) and conforming (i.e., meeting the federal air quality standards).

On May 22, 1998, Congress passed the Transportation Equity Act for the 21st Century (TEA-21) authorizing highway, highway safety, transit and other surface transportation programs for the next six years. TEA-21 generally preserves the 1991 Intermodal Surface Transportation Efficiency Act's (ISTEA's) transportation planning process emphasizing the role of state and

local officials in cooperation with transit operators, in tailoring the planning process to meet metropolitan and state transportation needs.

The DEIS has particularly important implications for the federally mandated project development process for major public transportation improvements. The preparation of an Environmental Impact Statement (EIS), together with its required public circulation and review procedures, ensures that significant transportation and environmental effects are assessed and that public participation and comments help guide the decision-making process. The cost-effectiveness analysis, performed as a part of the previous study and updated for this EIS (see **Section V.B**), further helps ensure that the limited funds available for transportation improvements are directed toward the most cost-effective solution. Similarly, the identification, examination, and assessment of all promising options are necessary to meet NEPA requirements, as well as State of Maryland environmental regulations. This DEIS assesses the type and extent of potential environmental effects of the alternates considered for the I-270/US 15 Multi-Modal Corridor. Potential mitigation measures for adverse impacts are identified and will be further developed in subsequent project phases, together with estimates of the costs and effectiveness of such measures.

2. Summary of Local Decision-Making and Analytical Work to Date

a. Summary of Local Decision-Making

The I-270/US 15 Multi-Modal Corridor Study began in June 1994 as a jointly sponsored effort by SHA and the MTA. The original study encompassed the I-270/US 15 Corridor from the vicinity of the Shady Grove Metro Station (Montgomery County) to Biggs Ford Road (Frederick County) as well as existing MARC and future Frederick MARC service.

The resource and regulatory agencies, which included the Federal Highway Administration (FHWA), the US Army Corps of Engineers (USACOE), the US Environmental Protection Agency (EPA) and the US Fish and Wildlife Service (USFWS), concurred with the project's purpose and need in November 1995. These agencies, along with the National Park Service (NPS), Maryland Department of Natural Resources (DNR) and Maryland Department of the Environment (MDE), concurred with the Alternates Retained for Detailed Study (ARDS) in Fall 1998. The FTA is a joint sponsor, with the FHWA, for the project.

Stage I

The project team, with input from the public and the I-270/US 15 citizen's focus group, identified various transportation improvements (strategies) and goals and objectives to be used for evaluating I-270/US 15 Corridor improvements. Performance measures or Measures of Effectiveness (MOE) were established to quantify how well transportation improvements met the goals and objectives. Transportation improvements and strategies that were evaluated included the following:

- No-Build
- Intersection/Interchange Improvements
- Additional Telecommuting Centers (TDM)
- Additional Park and Ride Lots (TSM)
- Encouraging Flexible Work Hours (TDM)
- Growth Management Strategies (TDM)
- Intelligent Transportation Systems (ITS)
- Transit Improvements (LRT and Busway)
- Highway Widening (General-Purpose Lanes)
- Highway Widening (High Occupancy Vehicle (HOV) Lanes)
- Highway Widening (Collector-Distributor (C-D) Lanes)

Conclusion of Stage I

Based on these goals, objectives and MOE, the project team determined that ***no single strategy would solve these transportation challenges***. Therefore, the project team joined the transportation strategies into truly multi-modal alternates referred to as the Baseline, TSM/TDM, Combination A, Combination B and Combination C Alternates. A detailed discussion on the transportation alternates is presented in **Chapter II**. Even though the preliminary investigations of the stand-alone transit strategies, for either bus or LRT, showed little demand for additional transit by the design year of 2025, there was local interest to give transit another opportunity. Therefore, the project team reevaluated transit along two alignments (Corridor Cities Transitway (CCT) and CSX) and with two modes (LRT and bus) to serve the corridor cities. These evaluations included investigating various northern termini (Metropolitan Grove, Germantown, COMSAT, and Frederick), alternative fare structures (comparable with Metrorail), a reduced number of transit stations, an aggressive feeder bus network and increased land use densities within one-half mile of the transit stations.

The results of these analyses indicated that COMSAT (approximately 13.5 miles distant from Shady Grove) as the farthest north feasible terminus by the design year (versus the original Metropolitan Grove terminus with a distance of approximately 6.5 miles) to evaluate in the DEIS. In addition, a CSX light rail alignment between the Shady Grove Metro station and the Metropolitan Grove MARC station was not carried forward for further study. This alignment does not provide service to emerging growth areas west of I-270. It is also inconsistent with local and regional 2020 land use priorities. Due to priorities of the local jurisdictions and the travel demand results, the decision was made that a transitway alignment (either Bus Rapid Transit (BRT) or LRT) from the Shady Grove Metro Station to COMSAT would be carried into several of the alternates for more detailed engineering and environmental studies. The CCT alignment and the COMSAT terminus were chosen for detailed study based on cost effectiveness, local and state transit service goals, ridership and impacts, the Premium Bus alternate was also chosen for detailed study, based on the same measures.

Stage II

By early 2001 the counties had not identified recommended maintenance facility sites. Therefore, the project team expanded the project scope to include the identification and investigation into this aspect of the project improvements.

The project team presented the project goals, objectives and MOEs, as well as the initial transportation strategies and the proposed alternates at the February 12, 2001 (Montgomery County) and February 20, 2001 (Frederick County) Informational Public Meetings for review and comment. The goals, objectives and MOE were used to evaluate how each of the initial transportation strategies would address the Corridor's transportation challenges. Refer to the Summary of Public Involvement section in **Chapter VII. Comments and Coordination, Page VII-4** for more information on public meetings held in this study.

The project team also revised the horizon year for analysis from 2020 to 2025. As part of the NEPA process, the updated alternates were evaluated under a new MWCOC travel forecasting model run with revised socioeconomic information. This DEIS presents the detailed alternates and analyzes the environmental impacts. A Location/Design Public Hearing will be held in 2002 following the completion and circulation of the DEIS for agency and public comment. Comments received during the Location/Design Public Hearing and during the circulation period for the DEIS will be considered prior to selection of any preferred alternative for the corridor. The disposition of comments received will be incorporated into the Final Environmental Impact Statement (FEIS).

b. Analytical Work to Date

Land Use Expert Panel

As part of the I-270/US 15 Multi-Modal Corridor Study, MDOT conducted a Land Use Expert Panel. The panel's final report is presented in **Appendix F**. The panel was selected to assess likely future events, or the impacts of potential transportation investments on land use, by responding to several rounds of questions. The expert panel process consists of two phases. The first phase provided a qualitative assessment of the likely locations and intensities of development that may result from three hypothetical transportation scenarios. The second phase involved estimating population and employment changes for 19 Forecast Zones according to three transportation alternatives. MDOT received a Federal Transportation, Community, and System Preservation (TCSP) grant to carry out this expert panel process, the result of which is the land use basis of this DEIS' Secondary and Cumulative Effects evaluation, see **Section III.K**. In addition, the I-270/US 15 Land Use Expert Panel will be included as one of several case studies for a National Cooperative Highway Research Program (NCHRP) report on expert panels.

Congestion Management System

ISTEA and TEA-21 have challenged states to improve transportation system performance and more effectively use various modes of travel. Part of the challenge of ISTEA and TEA-21 is to alleviate or prevent congestion in the transportation system through better management of

existing services and facilities and consideration of both multi-modal improvement options and strategies to manage the need and demand for travel. The *Final Rule on Management and Monitoring Systems*, December 19, 1996, defines a congestion management system (CMS) as: "...a systematic process for managing congestion that provides information on transportation system performance and alternative strategies for alleviating congestion and enhancing the mobility of persons and goods to meet state and local needs."

In compliance with this rule, MDOT is responsible for developing, implementing and maintaining the CMS for Maryland. The CMS Oversight Committee, comprised of the MPOs, and State and Federal representatives, manages preparation of this analysis and report. The Baltimore and Washington region MPOs (Baltimore Regional Transportation Board and the Transportation Planning Board, respectively) have developed CMSs for their respective regions, which support and supplement statewide congestion management activities.

The CMS is a decision-making support system, used for identifying existing and projected congestion mobility problems and needs and evaluating alternate strategies for addressing problems in both a metropolitan and statewide transportation context. The CMS process provides information so that decision-makers can make informed choices about transportation investment options and policy.

The function of the CMS in Maryland is to provide for a systematic, comprehensive analysis of causes and solutions to traffic congestion and mobility needs in 29 identified transportation corridors throughout the State. The CMS Corridor #2 extends from Rockville to Frederick. The CMS involved the MPO, Federal, State, and local transportation and planning agencies, and CMS Oversight Committee representatives. The CMS will be implemented in corridors that experience major travel demand, and will seek to address the demand on the congested facilities in these corridors by considering and recommending a set of strategies to address the identified needs and problems.

The CMS considers a number of strategies ranging from low cost, operationally oriented improvements, to transit service and facility capital improvements, high occupancy vehicle (HOV) options, and options that can reduce the need for certain types of travel, or that can shift it out of the periods of peak congestion. Strategies to increase general-purpose highway capacity through widening of existing roads or building new roads are considered in situations where other strategies cannot adequately address the identified needs and problems in the Corridor. This DEIS uses a corridor approach, consistent with the CMS, for problem identification, strategy evaluation, and strategy implementation to evaluate the I-270/US 15 Corridor. A list of the CMS strategies evaluated in this study is presented in **Appendix H**.

3. Livable Communities Initiatives and Transit Supportive Development

In 1994, the FTA undertook a program called the Livable Communities Initiative. This program promotes transit as a way to strengthen the link between transportation and communities. It encourages planning in and around transit facilities to improve a community's access to major economic and community activities without reliance on single occupant vehicles. Planning for livable communities includes a vital community outreach component to ensure that such

planning meets with the goals and objectives of community residents and businesses. A community-oriented, user-friendly and well-designed development would include readily available customer information; a safe environment; easy access to pedestrian, bicycle and transit facilities; nearby customer services; and an architectural design that reflects the community in which it is located.

The first priority of transit-friendly/transit-oriented development is to establish density gradients that put dense development near transit stops and lines. This type of development is also “pedestrian friendly.” Successful transit-oriented development contains a mix of complementary and related uses that can be easily accessed by foot.

Several of the master plans in the project area address and support the livable communities initiatives and transit supportive development concepts. The *Gaithersburg Vicinity Master Plan Amendment Stage III: Shady Grove Study Area* (July 1990) proposes a land use pattern that is strongly oriented to the Corridor Cities Transitway. The Plan states:

“The importance of transit to the future of the Shady Grove Study Area cannot be underestimated. This Plan designates three separate transitways as well as high priority regional and neighborhood bus routes. Higher intensity uses are directed to transit stops. In portions of the Study Area where lower intensity employment uses are recommended, the Plan encourages the clustering of buildings toward bus routes.”

The *Germantown Master Plan* encourages the careful design of its Town Center to include joint development of office, transit and high density housing to act as a major gateway to Germantown. (October 1989, page 53).

The *Clarksburg Master Plan* recommends a transit-oriented land use pattern within some of its development districts, including the Town Center and the Transit Corridor District, located east of I-270. “Clustering residential uses close to the transit stop will allow residents to walk to transit.” (June 1994, page, 51). The Plan also endorses a transit-oriented development pattern in the Cabin Branch Neighborhood, located east of MD 355 that will “facilitate bus access and circulation within the neighborhood and which will place all residents within convenient walking distance (one-quarter mile) of a bus stop”. (Ibid. page 68).

The *Frederick County Comprehensive Plan* encourages transit-oriented development adjacent to MARC stations and around the proposed stations along the I-270 transitway. (October 1998, page 7-28)

The *City of Frederick Comprehensive Plan* (August 1995) does not address higher density development around transit stations specifically; however, the plan does encourage a basic philosophy of FTA’s livable communities initiatives by recommending a mix of residential density units and a reduction in the number of single occupancy vehicles, especially on I-270.